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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,516	04/15/2002	Karl Eck	502901-118PUS	8683

7590 05/26/2005
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EXAMINER

BHAT, NINA NMN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,516

Applicant(s)

ECK ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant is advised the many of the amendments to the specification filed in the Paper of 4-15-2002 has not be entered properly probably because of the change to image file wrapper as well as the change in the rules for filing amendments. In order to ensure these amendments are properly entered. The examiner is advising applicant to re-iterate these changes in response to this office action, so the examiner can insure that the amendments to the specification are in fact entered. The examiner acknowledges that this case is a 371 application applicant is required to state this in the specification on page 1, line 1. The preliminary amendment to the claims canceling claims 1-13 in favor of claims 14 to 29 is acknowledged. Action on the merits of claims 14-29 follows:

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 14-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyota EP0798798.

Toyota teaches a method and apparatus for reforming fuel and a fuel cell wherein the system includes a heat sink, a heat source reactor, and a heating/cooling device and flow conductor for transporting heat there between. Specifically, methanol and water is

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vaporized in an evaporator (24), which is then supplied to a reformer (22) as raw fuel gas. The An oxidation reaction of methanol supplied as raw fuel process in the reformer (22) to generate hydrogen and carbon dioxide, while a steam reforming reaction of methanol simultaneously proceeds in the reformer 922) to generate hydrogen and carbon dioxide. The amount of heat required for the endothermic reforming reaction can be supplied by the oxidation reaction of methanol. No external heat source is required in the reformer to supply the heat required for the reforming reaction. The hydrogen rich gas fuel generated by the reformer (22) is led into the CO reduction unit (26) via a third fuel conduit. A closed loop heat transfer loop is provided and the heat from the exothermic reaction is used to drive the endothermic reactions. [Note the abstract, page 10, lines 35-57 - page 11, lines 1-19 and Page 12 lines 1-47]. The apparatus and method as described by Toyota EP 0798798 fully anticipates applicant's claims as drafted.

5. Claims 14-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitsubishi EP0861802.

Mitsubishi EP0861802 teach a fuel reforming apparatus comprising a liquid feed heating portion which includes an evaporation portion a steam superheating portion a reforming portion, a shift reaction portion and co oxidation portion. The portions includes at least one heat sink functioning as a heat sink, a heat source reactor function as a heat source flowing through the heat sink reactor and at least one heat source reactor element, a heating/cooling device and a flow conductor connecting the heating and cooling units for transporting heat to the heat sink and heat source reactor.

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Specifically, in Figure 1 a diagram which depicts the temperature distribution between the liquid feed heat portion, evaporation portion, steam superheating portion, reforming portion, shift reaction portion and co oxidation portion and catalytic combustion portion and a heat recovery portion all connected by heat transfer fins which are stacked into an integral structure. The heat necessary for the evaporation portion (2) is supply by the exhaust heat of the combustion gases of the low temperature heat recovery portion (7a) and the heat generated in the CO oxidation portion(5). [Note Column 12, lines 21-53]. The reference fully anticipates applicant's claims as claimed.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimazu et al. teach a fuel reforming apparatus. Greismeier teach a fuel cell system and method of operating the fuel cell. Beshty teach a method and apparatus for steam reforming methanol into hydrogen.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat
Primary Examiner
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